

LSE Research Online

Steve Coulter

The UK labour market and the ‘great recession’

Book section (Published version)

Original citation: Originally published in: Myant, Martin, Theodoropoulou, Sotiria and Piasna, Agnieszka, (eds.) Unemployment, Internal Devaluation and Labour Market Deregulation in Europe. Brussels, Belgium : European Trade Union Institute, 2016, pp. 197-227.

© 2016 [ETUI](http://etui.org)

This version available at: <http://eprints.lse.ac.uk/65615/>
Available in LSE Research Online: March 2016

LSE has developed LSE Research Online so that users may access research output of the School. Copyright © and Moral Rights for the papers on this site are retained by the individual authors and/or other copyright owners. Users may download and/or print one copy of any article(s) in LSE Research Online to facilitate their private study or for non-commercial research. You may not engage in further distribution of the material or use it for any profit-making activities or any commercial gain. You may freely distribute the URL (<http://eprints.lse.ac.uk>) of the LSE Research Online website.

This document is the author's submitted version of the book section. There may be differences between this version and the published version. You are advised to consult the publisher's version if you wish to cite from it.

Chapter 6

The UK labour market and the 'great recession'

Steve Coulter

1. Introduction

The United Kingdom's labour market performance during the so-called 'great recession' and its aftermath – for the purposes of this chapter, 2008 to late 2014 – was fairly distinctive compared with that of continental Europe and other 'flexible' labour markets, such as the United States. It also behaved differently in comparison with the two previous recessions in the United Kingdom, in the early 1990s and early 1980s. Despite a recession that was deeper and more prolonged than the earlier episodes, unemployment rose by less and has fallen back more rapidly since. Economic recovery has been accompanied by notably rapid job creation. At the end of 2014 employment was at its highest ever level, at 31 million, a rate of 73.2 per cent and more than 1 million above the pre-crisis peak in 2008. Particularly impressive has been the labour market's ability to weather steep cuts in the public sector payroll, with losses more than made up for by the creation of nearly 2 million private sector jobs. The recovery has also been accompanied by significantly higher participation rates.

The flipside of this impressive headline performance has, however, been sharp falls in real wages and productivity alongside evidence of growing labour market polarisation. In keeping with this pattern, most employment creation since the end of the recession has been in part-time or insecure jobs and the economy has only very recently begun to generate well-paid, full-time jobs in significant numbers. How can these patterns be explained? From a policy perspective, there are two key contrasts with earlier recession/recovery cycles in the United Kingdom, which are emphasised to varying degrees by analysts. First, macroeconomic policy has been much more supportive of growth than in previous recessions (and far more so than in euro-zone countries). Second, it is arguable that the UK economy in the late 2000s was the beneficiary of several decades of innovation in labour market policy, the cumulative impact of which are

likely to have enhanced the impact on job creation of the rebound in growth from 2011.

However, disentangling the overall impact of these factors is complex and difficult, particularly given the uneven impact of the crisis and recovery on the labour market. While the continuing poor competitiveness of the UK economy suggests the good jobs performance has been at the cost of declining productivity, the causes and effects of these trends are still open to interpretation.

This chapter lays out some of the basic dimensions of the United Kingdom's labour market performance during the period and suggests some explanations for its distinctiveness. Section 2 addresses the macroeconomic policy response to recession. Section 3 then explains the impact of the recession on employment and unemployment, while Section 4 focuses on compositional effects. Section 5 considers a number of explanations of the outcomes observed and Section 6 concludes.

2. The macroeconomic policy environment

An important explanation of the United Kingdom's good employment performance during the recession and afterwards was, clearly, that macroeconomic policy was generally very supportive. In contrast to the two previous recessions, which took place against a backdrop of high inflation, policy this time was considerably more expansive, with a rapid loosening of both fiscal and monetary policy from late 2008 to stimulate demand. The recent recession, although particularly serious, reflected the downswing in a credit cycle rather than being the consequence of a contraction of monetary policy in response to high inflation, giving the authorities – particularly the Bank of England, which cut interest rates aggressively despite initially above-target inflation – much more room for manoeuvre. Unprecedentedly loose monetary policy probably removed many of the cash-flow restraints on firms and lower inflation made it easy for them to restrict wage growth without putting too much downward pressure on real wages.

Although discretionary fiscal policy has tightened considerably since the end of the immediate crisis period, making negative contributions to growth from 2010/11 to 2012/13, policy has slowly begun to reverse course and the UK Treasury estimates fiscal policy to have resumed

making modest contributions to growth from 2013/14 onwards. Tax cuts on low earners and falling inflation also led to a considerable boost to demand from domestic consumption from 2012. There are therefore grounds for supposing that the supportive macroeconomic environment played an important part in the United Kingdom's rebound from the recession and stands in considerable contrast to the response to the recessions of the early 1980s and 1990s when policy was a lot tighter.

This also provides an obvious point of comparison between the United Kingdom's experience and that of euro-zone countries which were forced to implement internal devaluation as their primary instrument of structural adjustment. The working definition of an internal devaluation used in this book – a policy strategy tasked with securing a fall in unit labour costs and/or prices to improve the external competitiveness of the economy within a monetary union or currency peg – is clearly not applicable to the United Kingdom. As a non-member of the European single currency with a freely floating exchange rate and independent national central bank the United Kingdom is in a somewhat different position.

The United Kingdom has been able to take advantage of its independent monetary policy to secure adjustments to competitiveness through the real effective exchange rate during the euro-zone crisis. It has also been able to partially counter the demand shock of domestic and international recession by pursuing 'quantitative easing' (QE). The Bank of England was an early convert to QE and pumped a total of GBP 375 billion – around a quarter of annual GDP – into the economy between 2009 and 2012 through purchases of assets, mostly government gilts. While the long-term effects of QE, including its distributional impact, are debateable, the policy is estimated to have increased real UK GDP by 1–2 per cent.¹ While the UK authorities have regularly been of 'talking down' the value of the pound, there was arguably no need for them to do this as the extent and duration of the UK's QE programme exerted considerable downward pressure on sterling on its own as currency markets became flooded with pounds.

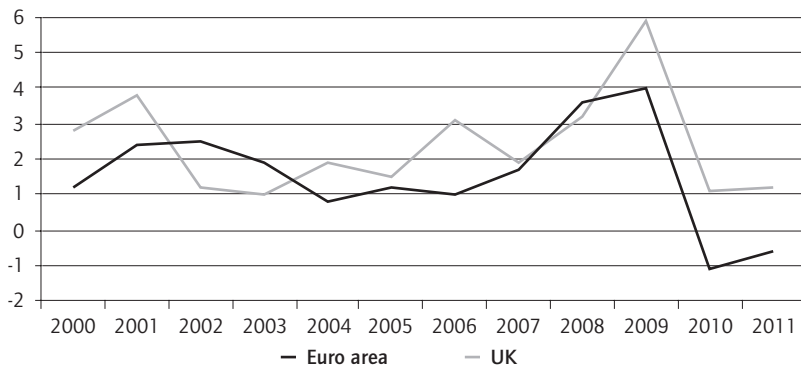
The range and potency of the monetary policy tools available to the UK authorities therefore place the country in a singular category with regard

1. 'The United Kingdom's Quantitative Easing Policy. Design, Operation and Impact.' Bank of England Quarterly Bulletin 2011 Q3.

to labour market outcomes and policy developments during the period we are considering. Nevertheless, discussion of the external environment facing the UK economy is still clearly important because of its dependence on trade, with the European Union accounting for roughly 50 per cent of the export total. Moreover, developments in the external position of the United Kingdom illustrate the systemic weaknesses in the international competitiveness of the UK economy manifested in, particularly, its poor productivity performance.

Sterling had, in fact begun to depreciate before the crisis erupted in 2008 relative to the euro and other currencies. However, despite a 20 per cent real depreciation of sterling compared with 2007, the UK's current account deficit deteriorated to a record 5.7 per cent of GDP by late 2013. Although much of this deficit was caused by a deterioration in the investment income balance rather than imports growing much faster than exports the United Kingdom's inability to exploit a weaker sterling reinforces the suggestion of a chronic competitiveness problem that shows up in its poor productivity.

Figure 1 Unit labour costs in manufacturing in national currencies; year on year growth



Source: OECD.

The OECD has been highly critical of the United Kingdom's inability to tackle this. The OECD attributes the limited impact on exports of sterling's recent rise to faster rising unit labour costs in manufacturing, possibly due to greater labour hoarding during the downturn. As Figure 1 shows, unit labour costs in the United Kingdom increased faster than the euro-zone average after 2003. However, while unit labour costs have

been cut following the recession, they continue to increase in the United Kingdom, a trend which has cut improvements in relative costs to less than 10 per cent, putting pressure on profit margins, leading to higher export prices and leaving relative export prices only around 5 per cent lower.

The United Kingdom's lack of international competitiveness suggests that it is domestically-generated consumption that is driving most employment growth rather than exports or domestic investment (which has been cut). This may help to explain the sectoral composition of changes in the labour market, particularly growth in many low-skill sectors, which are explored in Section 4. Before that, however, it is worth examining in more detail the shifts in growth, employment and unemployment.

3. How did the UK labour market perform during the recession?

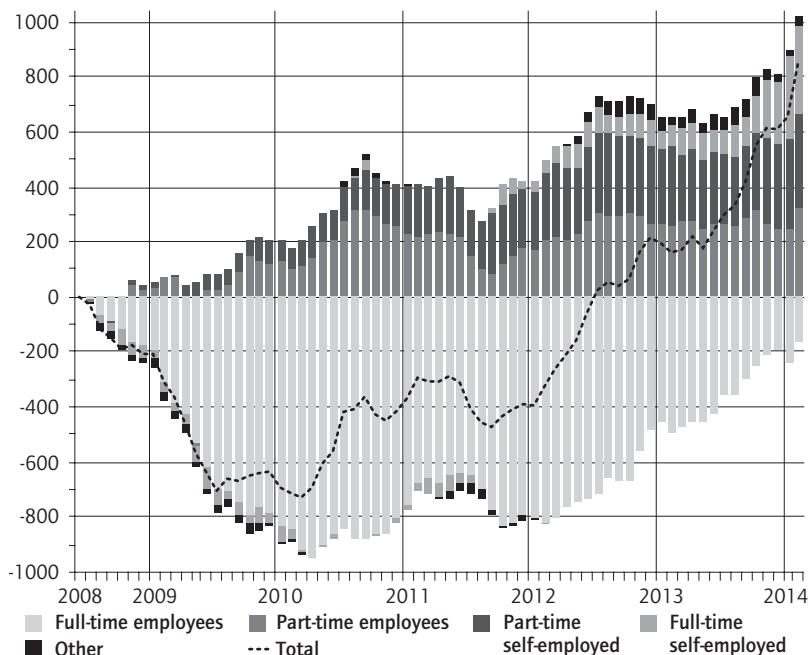
The headline figures on employment and unemployment in the United Kingdom have undoubtedly been strong, with lower than expected rises in the jobless totals and robust employment growth which has largely tracked the uptick in the economy. Both are in marked contrast with protracted recoveries from previous UK recessions, as well as being unlike the experience of other countries. Closer inspection of the data, however, indicates that much of the employment growth has occurred in part-time jobs and self-employment, suggesting that considerable labour market slack remains. The rest of the section outlines how the UK labour market coped with the recession and its aftermath and puts this in its historical and comparative context.

3.1 Employment and GDP

The United Kingdom's 'great recession' was characterised by a sharp and prolonged drop in GDP – by 6 percentage points in total over six successive quarters from Q2 2008 until Q3 2009 – alongside a much less significant fall in employment compared with previous, less severe recessions. In addition, while GDP struggled to recover its pre-2008 peak and trend rate, employment has recovered strongly, regaining its pre-2008 peak by 2013. This is in marked contrast with previous recessions. In the 1980s downturn the percentage fall in employment was broadly in

line with the percentage fall in GDP, while in the early 1990s recession the fall in the employment rate was larger than the decline in GDP. In addition, the recovery in employment in both previous recessions lagged the rebound in GDP by about 12–14 months and remained below the pre-recession level for a year and a half after the recovery began in earnest. By contrast, in the 2008–2009 recession, both employment and GDP growth began to pick up almost simultaneously around the end of 2009.

Figure 2 Contributions to the change in whole-economy employment since 2008Q2



Source: Bank of England Inflation Report (May 2014).

The growth in jobs has continued as the United Kingdom's recovery gathers pace, with the number of people in work rising to a record total of nearly 31 million. The average weekly number of hours worked has also increased sharply, rising from 949.3 million in the period January–March 2008 to 975.9 million in January–March 2014 (via a low of 909 million in July–September 2009). On the other hand, most of the growth in jobs that has occurred has been in part-time positions or self-employment. The percentage of people in full-time work fell from an

average of 74.5 per cent of the total in employment between January 2000 and December 2008, to 73 per cent between January 2009 and November 2013. The Bank of England estimates that half of the rise in private sector employment since mid-2010 has been accounted for by part-time working, either by employees or by the self-employed (see Figure 2). According to the employers' group, the Confederation of British Industry (CBI), it was only in April 2012 – several months after an improvement in other data – that the United Kingdom saw a rise in full-time job creation.² On the other hand, other data do not suggest that labour is being particularly underutilised; for example, flows into employment have remained strong. Bank of England data show that firms' capacity utilisation, which fell early in the recession, has improved since 2009.³

A very high share of the rise in the number of people in work is also due to growth in self-employment, with the total of workers in this category rising from 3.7 million in September 2008 to 4.4 million in early 2014. Self-employed workers now account for 15 per cent of the labour force, up from just under 12 per cent in 2000, although it has been on a rising trend for the past decade as a natural function of an ageing and expanding workforce; comparisons with other OECD countries indicate that the United Kingdom is not an outlier in this regard.

Nevertheless, the growth in self-employment has been a noteworthy feature of this recession and recovery cycle, with the Bank of England estimating that self-employment accounts for a third of the net rise in employment since 2010.⁴ The Office for National Statistics (ONS) attributes the rise mainly to a fall in the number of people leaving self-employment rather than an increase in the numbers entering it.⁵ It also notes a marked increase in the number of those at or near retirement age designating themselves 'self-employed', suggesting that falling asset prices during the recession and a corresponding decline in the value of pension annuities may be encouraging older workers to delay full retirement. Policies such as the New Enterprise Allowance, a benefit subsidy for those starting a business, and the Work Programme, the government's flagship welfare-to-work scheme, may have magnified this

2. CBI Industrial Trends Survey 2012.

3. Bank of England Inflation Report. November 2012, p. 29.

4. Bank of England. 'Self-Employment. What can we learn from Recent Developments?' Quarterly Bulletin, Q1 2015.

5. 'Self-Employed Workers in the UK', ONS, 2014.

tendency by offering alternative sources of income, although data on the age profile of those affected by these policies are unavailable and there is no reason to suppose that the effect is large.

Sectors seeing the largest increases in self-employment include: education, public health and social work, real estate, administration and many service activities. In most, although not all, of these sectors there has been accompanying growth in employee positions, implying no general strategy on the part of employers of substituting employee for self-employed positions. However, suspicions linger that some public sector employers in particular have responded to the tightening of funding since the recession by replacing outgoing employees with freelancers rather than permanent staff. Teaching unions have suggested in evidence to parliament that schools are no longer employing new teachers to fill vacancies and are making more use of temporary supply teachers instead. Between 2008 and 2013, employee jobs in the education sector rose by 5 per cent, but the number of self-employed jobs was up 58 per cent. The National Association of Schoolmasters Union of Women Teachers (NASUWT) claims that schools spent GBP 293 million on supply teachers in state secondary schools in England and Wales in 2009–2010, although it provides no details about the numbers of jobs involved.⁶

3.2 Labour supply

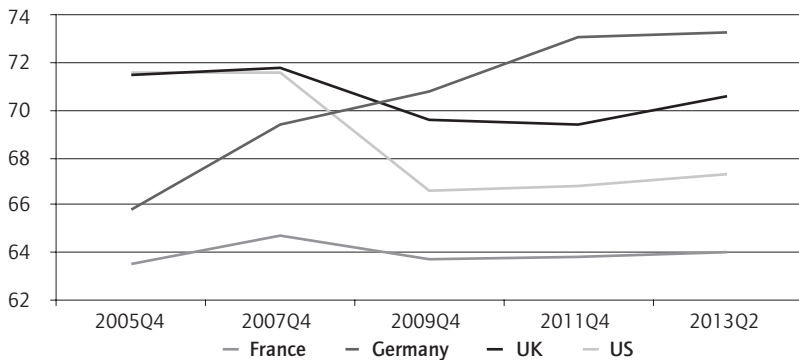
During the recession the United Kingdom also saw a fall in the labour participation rate from 76.8 per cent in 2008 to 76.3 per cent in 2010, although it has since recovered to 77.1 per cent in 2012, according to OECD data. Of particular note was the sharp fall in participation rates among younger workers, declining by 15–20 per cent in the 16–19 age-group. This probably reflects higher enrolment rates in further and higher education as a consequence of reforms enacted since 1997 to increase participation in higher education, including a large expansion in the number of university places. In 1993, for example, students accounted for one in five of all inactive individuals, but by the start of the recent recession this had increased to one in four (Jenkins 2010). On the other hand, at older ages participation rates have risen markedly. Labour force

6. Written Evidence given to the House of Lords Select Committee on Personal Service Companies, 2013.

participation for the 55–64 age-group increased at a slightly faster rate than for the prime age group (25–54).⁷ One explanation for this may be that value of private pension annuities has declined significantly over the 2000s, making early retirement a less attractive option and encouraging older workers to find part-time employment.⁸

Another complicating factor is the impact of net immigration. The United Kingdom has absorbed large numbers of immigrants from the EU, particularly with the accession of the A8 countries in 2008. This is likely to have increased the total labour supply and may also have enhanced its flexibility, as immigrants from poorer countries are more willing to work in insecure sectors and for lower pay. However, detailed empirical studies are unable to find a significant impact on employment patterns as the increase in employment is much larger than the increase in the size of the labour supply brought about by immigration. A major recent study by the Business Department concluded: 'To date there has been little evidence in the literature of a statistically significant impact from EU migration on native employment outcomes.'⁹

Figure 3 Employment rate, % of the labour force



Source: OECD.

7. OECD Employment Outlook. 2013. Statistical Annex table C.

8. Bank of England Inflation Report, May 2013.

9. 'Impact of Migration on UK Native Employment: an Analytical Review of the Evidence, Devlin *et al.*, Department for Business, Innovation and Skills/Home Office, Occasional Paper 109, March 2014.

3.3 Unemployment

The recession brought to a halt almost fifteen years of steadily declining unemployment from its earlier peak of 3.02 million out of work in 1993. The trough of the unemployment cycle was reached in August 2004 when just 1.4 million people were surveyed as being out of work, although the jobless numbers had picked up slightly to 1.61 million by April 2008 as the tightening of credit conditions for firms and households began to bite in the aftermath of the collapse of the Northern Rock building society, which saw the first run on a bank in over a hundred years and was accompanied by significant turbulence on financial markets. This was the tipping point for unemployment, which thereafter began a sharp climb as the economy tipped into steep recession in Q2 2008 to reach 2.47 million by June 2009. Unemployment then plateaued for about two years, only reaching its peak of 2.68 million in October 2011. As of mid-2014 it stood at 2.33 million over the three months to March, with 1.14 million claiming Job Seeker's Allowance, the main social benefit for those out of work.

In comparison with other advanced economies, the United Kingdom entered the crisis with a comparatively low level of unemployment, averaging 5.1 per cent over the 33 quarters to Q1 2008. This level then increased substantially to a peak of 8.3 per cent in Q4 2011, a larger increase than most G7 countries other than the United States (see Figure 4 and Table 1). However, as noted above, the loss of jobs was smaller than the extent of the fall in GDP. The number of jobs 'saved' in the UK relative to the losses that might have been expected had the percentage fall in employment tracked that of GDP has been put in one analysis at around 1 million (Gregg and Wadsworth 2010). Along with Sweden, the United Kingdom is the only OECD country to have experienced a smaller rise in unemployment relative to its fall in GDP without a deliberate government-funded strategy of short-time working. Italy, Germany and the Netherlands saw lower rises in unemployment compared with the United Kingdom and their own GDP performances, but these countries followed a policy of employment subsidies.

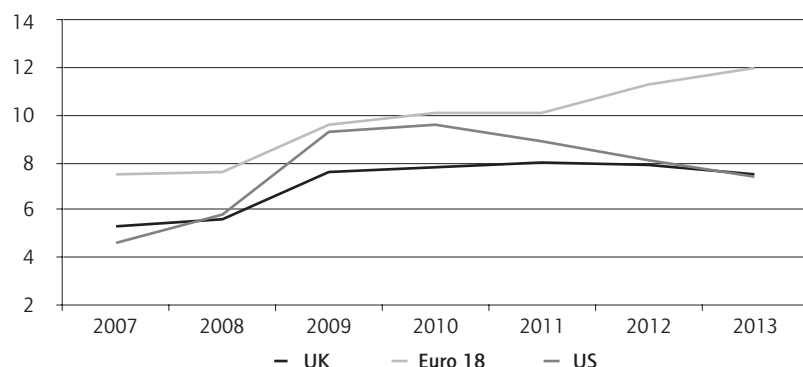
Much is often made of the United Kingdom's high degree of labour market 'flexibility' as a causal factor behind its distinctive experience of recession. In the United Kingdom, labour market flexibility mainly takes the form of numerical and wage flexibility (corresponding to the ability of firms to adjust headcounts and pay, respectively), which is reflected in its lower levels of employment protection legislation¹⁰ and more decen-

tralised wage bargaining. The 'external' flexibility enjoyed by UK firms contrasts with 'internal' functional and temporal flexibility prevalent in the more 'coordinated' economies of continental Europe, which require high-trust relationships to be fostered between firms and their workforces that arguably make them less ready to shed labour during downturns.

Table 1 Harmonised unemployment data (OECD) %

	2008Q4	Peak of the cycle	2014Q3
UK	6.3	8.3 (2011Q4)	5.9
Eurozone	8	12 (2013Q1)	11.5
US	6.9	9.9 (2009Q4)	6

Figure 4 Unemployment, % of labour force



Source: Eurostat.

On the other hand, both the United States and Ireland, two countries with externally flexible labour markets, experienced much higher rises in unemployment than the United Kingdom, along with Spain, which has a large share of weakly-protected jobs in an otherwise tightly regulated labour market. Notwithstanding the different macroeconomic policies pursued by these countries, these diverse outcomes would suggest that labour market flexibility is not a necessary condition for good unemployment performance, a conclusion which is reinforced by examining the evolution of labour market policy in the 1990s and 2000s (see Section 5).

10. 'Protecting Jobs, Enhancing Flexibility. A New Look at Employment Protection Legislation'. OECD Employment Outlook 2013.

4. Sectoral changes

The most significant structural development in the United Kingdom labour market since the start of the recession has been the shift from public to private sector employment thanks to a deep and prolonged austerity drive with the professed aim of cutting the United Kingdom's budget deficit. Public sector employment fell from a peak of just over 6 million in mid-2008 to 5.41 million in late 2014, with cuts concentrated in administration and non-protected areas of departmental spending (that is, excluding the ring-fenced health care and education budgets).¹¹ As a proportion of aggregate employment, the public sector has been cut from 21.9 per cent in 2008 to 17.6 per cent. But numerically this has been more than offset by job creation in the private sector, which largely accounts for the steady rise in total employment experienced since the end of recession. Private sector employment during the recession fell by 0.8 million from peak to trough, but recovered quickly and has risen by around 2 million since early 2010. Despite the falling headcount, the overall public sector pay bill has actually increased since the start of the jobs cull, implying that it has been low-paying public sector jobs that have been cut. But have these workers moved into high- or low-skilled private sector jobs?

This section analyses changes in the labour market at sectoral level through an analysis of Labour Force Survey (LFS) statistics published by the ONS. The broad conclusion is that most of the jobs lost in the public sector were low-skilled; those created in the private sector were both high- and low-skilled, but with low-skilled jobs predominating.

Another important consideration is the shift between different sectors of the labour force, particularly highly-skilled and/or high-paying sectors and medium/low-skilled sectors. These trends can be difficult to analyse owing to differing definitions. Three approaches are considered here. The first uses occupational classifications published by the ONS to paint a picture of changes to the labour market and reveals strong growth in high-skills occupations and low growth in low-skills areas. However, this

11. These figures have been distorted somewhat by several developments: the nationalisation of several major banks in 2008; the reclassification of some English further education colleges out of the public sector in 2012; and the privatisation of Royal Mail in 2014. Nevertheless, it remains the case that cuts in the public sector payroll have been more than compensated for by private sector employment expansion.

approach relies on *descriptions* of occupations and so suffers from 'job-title inflation', or the tendency to attribute higher status to jobs without necessarily any change occurring in the nature of its responsibilities or the skills required to perform them.

The second method eschews the above approach to focus on changes in wage rates (wages here are assumed to be proxies for skill levels) with higher pay reflecting higher – and more scarce – skills, and vice versa. Finally, a third method analyses jobs in terms of whether the tasks they involve are routine or non-routine, a classification which has implications for the ability of employers to replace certain jobs through automation.

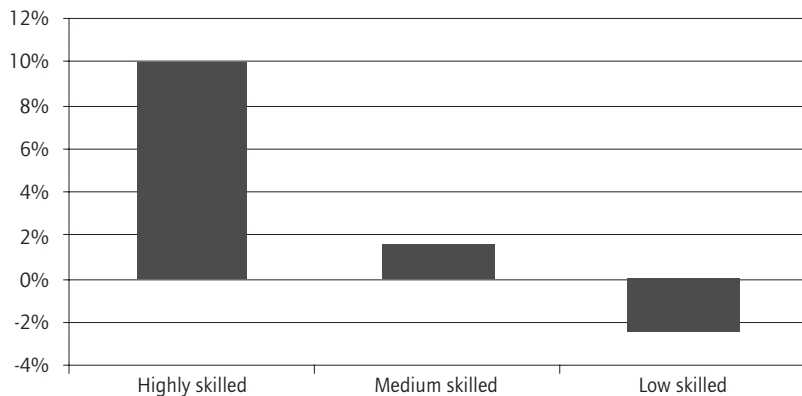
5.1 Trends in UK employment by occupational skill level

The LFS provides a quarterly analysis of all employment by occupation (EMPo8) based on 2010 Standard Industry Classifications. The data are grouped by skill level, as follows:

- High-skilled:
 - Managers and senior officials
 - Professional occupations
 - Associate professional and technical
- Medium-skilled:
 - Administration and secretarial
 - Skilled trades
 - Care, leisure and other services
- Low-skilled:
 - Sales and customer services
 - Process, plant and machine operatives
 - Elementary occupations

The data (see Figure 5) indicate that employment growth since the start of the recession has been overwhelmingly concentrated in high-skilled occupations, which saw growth of 10 per cent. There was only very slight growth (1.6 per cent) in medium-skilled occupations and a decline of 2.4 per cent in jobs in low-skilled areas. This reflects trends in the UK labour market going back to at least the start of the 2000s: whenever employment rose the increase was overwhelmingly from high-skilled jobs, with medium- and low-skilled occupations bearing the brunt as employment fell.

Figure 5 Proportion of employment growth by skill level of all employees, 2008Q1 to 2014Q2



Source: LFS.

This is backed up by analysis by the Bank of England, using a broader definition that identifies older and more qualified people as being highly skilled. According to the Bank, most of the net increases in employment between 2010 and 2013 reflect rises in the employment of older and well-qualified people in high-skilled occupations. More recently, however, employment growth has been concentrated among the young and lower skilled. Medium-skilled workers have seen their share of jobs growth decline or remain static throughout most of the period, although this group is now seeing some growth.¹² Analysis of the past two decades also indicates that the United Kingdom has replaced a larger share of the medium-skilled jobs that have been lost with lower (as opposed to higher) skilled jobs than other European countries.¹³

5.2 Trends in skill levels as defined by wage rates

A major problem with occupational classifications as reflecting skill levels is their subjective nature, with the tendency towards ‘job-title inflation’ a particular drawback of the method. An alternative, and possibly more objective, way of getting to grips with the changing occupational structure of the UK labour market is to use wages as proxies for skill levels. Basing

¹². ‘Inflation Report’, Bank of England, November 2014.

¹³. ‘Why is the decline of routine jobs across Europe so uneven?’, Holmes C., SKOPE Issue Paper 33, 2014.

their analysis on occupations ranked by mean hourly pay, recent research by the Resolution Foundation think tank and the Centre for Economic Performance (RF/CEP) at the LSE provides clear indications that the UK labour market has become increasingly polarised by skill level, with increases in employment in high and low skills sectors and declines in medium skill sectors. This reflects long-term trends beginning in the 1980s and 1990s. It is well supported by the academic literature (Goos and Manning 2003; Lindley and Machin 2013) and contradicts mainstream economic theory, which predicts that mainly high-skilled occupations will see employment share growth in advanced economies.

Analysis of LFS data over the past three decades by the RF/CEP shows that high-skilled occupations – the top 30 per cent of jobs – have dramatically expanded their share of UK employment, while middle skill occupations have experienced a relative decline. Low-skilled jobs at roughly the bottom fifth of the wage distribution also increased their employment share. These trends altered somewhat in the pre-crisis period of 2002–2007, with high-skilled jobs accounting for almost all the expansion of employment and the middle group (70th to 20th percentiles) seeing a decline. Low-skilled occupations held their share constant.

The most recent analysis by RF/CEP covering the crisis and recession years shows a sharp increase in labour market polarisation between 2008 and 2012. In this period, it was low-skilled jobs that expanded their share, with high-skilled jobs increasing at a slower rate and medium-skilled jobs continuing their decline (Plunkett and Paulo Pessoa 2013). Eurostat data on unemployment rates of the 15–64 population by level of education show that in the United Kingdom the unemployed percentage of those with tertiary education was lower than the average of the EU18 and increased by less: 2.3 per cent to 3.2 per cent (a 40 per cent rise) compared with 4 per cent to 6.9 per cent (+75 per cent).

5.3 Routine and non-routine tasks

The Resolution Foundation has also examined whether the changes to the labour market described above have played out differently between routine and non-routine occupations, with the former defined as involving tasks that are easier to automate. Employment in routine jobs fell by 5.2 per cent between 2007 and 2012. It rose by 2.7 per cent in middle-routine intensity jobs and by 5.7 per cent in non-routine jobs.

As non-routine jobs are concentrated in both the low *and* high paid sections of the labour force this trend also provides support for the increasing polarisation thesis. Since employers find workers engaged in non-routine tasks harder to replace than those doing routine tasks, it might be expected that the recession would have led to a decline in the latter, something which, in turn, is largely a continuation or acceleration of existing trends (Autor, Levy and Murnane 2003). On the other hand, real wages in non-routine sectors show the opposite trend: a clear decline in remuneration for the higher skilled which may be the result of employers squeezing wages in order to hang on to their workers.

5.4 Sectoral changes and the impact on pay

The unexpectedly poor performance of real wages has puzzled many analysts, especially given the apparent expansion of employment in high-skilled sectors. The broad explanation for stagnant pay rises – that pay has remained static in exchange for preservation of jobs at the cost of declining productivity – is explored fully in Section 3.1. But other factors could also be at work to do with the changing composition of the labour market.

One possible explanation for the fall in real wages is that the changing structure of the labour market may have boosted lower paying sectors at the expense of higher paying sectors. The broad shift in jobs from the relatively high paying manufacturing sector to lower paying services is a long-term trend that is likely to have been exacerbated during the recession. Since the average weekly nominal wage for a services worker was GBP 437 in 2010 compared with GBP 524 for a manufacturing worker, this broad trend is likely to have strengthened the trend towards lower wages in the economy.

Table 1 and Figure 6 compare changes in occupational sectors (2007 Standard Industry Classification) from before the recession with the most recent figures (Q1 2008 to Q3 2014). It illustrates the percentage increase in employment since the recession in each of 14 occupational sectors. In order to account for big differences in the size of some sectors (wholesale, retail and repair of motor vehicles at 16 per cent of the labour force, compared with agriculture, forestry and fishing, at less than 1 per cent) it also presents the percentage share of total employment for each sector in Q1 2008 (figures are rounded). The third column of the table also shows the average weekly wage in Q1 2008. The results give an interesting picture of changes in the UK labour market before and after the recession.

Table 2 Changes in employment share by sector

Employment sector (2007 SIC)	Change in employment 2008Q1 to 2014Q3, %	Share of employment 2008Q1, %	Weekly earnings as percentage of average (£443), 2008Q1
Public administration and defence	-12	5	121
Manufacturing	-10	9	114
Construction	-8	7	117
Wholesale, retail; repair of cars and motor vehicles	-4	16	87
Financial, insurance and real estate	-5	4	157
Transport and storage	6	5	105
Administrative and support services	7	8	104
Information and communication	9	5	157
Other services	9	2	90
Accommodation and food service	10	6	68
Education	11	8	118
Human health and social work	15	11	106
Agriculture, forestry and fishing	20	1	79
Professional, scientific and technical	25	7	157

Source: LFS, author's calculations.

In lower paying sectors of the economy (below the median sectoral weekly wage of GBP 471 a week) some sectors are growing, while others are in decline. The medium to low-paying human health and social work sector saw the third largest sectoral increase of 15 per cent from its already significant jobs share of 11 per cent of the labour market over the last six years, equivalent to over half a million jobs. Other relatively low-paying sectors seeing a significant percentage and absolute increase in their share of the labour force include accommodation and food services (up 10 per cent on its 6 per cent share in 2008) and administrative and support services (up 7 per cent on its 6 per cent share of total employment before the recession). The only really significant low paid sector to see a

significant fall in employment is retail, wholesale and repair of cars and motor vehicles, which has declined 4 per cent on its 16 per cent share of total employment in 2008.

Higher paying sectors of the labour force are, by contrast, over-represented among occupational sectors of the economy experiencing falls in employment. These include: public administration and defence (down 12 per cent on its 5 per cent share of the labour force); manufacturing (a fall of 10 per cent on its 9 per cent share); construction (down 8 per cent and accounting for 7 per cent of jobs in 2008); and financial services (down 5 per cent and accounting for 4 per cent of the labour force). The only large occupational sector among the higher paid segments of the labour force to see a significant increase in its share of workforce jobs was professional, scientific and technical, up 25 per cent on a 7 per cent initial share of employment.

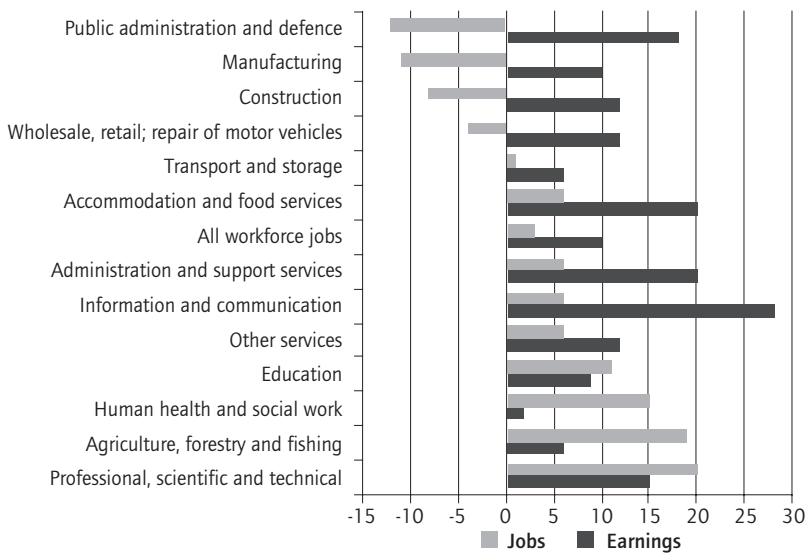
A salient feature of changes affecting the upper end of the earnings distribution has been the dramatic fall in numbers and employment share in, mainly, public administration and defence, reflecting the tight squeeze on public sector employment under conditions of austerity although, as noted earlier, the continued rise in the public sector payroll suggests it is mainly lower skilled public jobs that have been lost. On the other hand, health and social care (mostly in the public sector) saw a large increase in headcounts. Cyclical parts of the economy, such as construction and manufacturing – traditionally a source of large numbers of moderately well-paying jobs – have also taken a heavy hit. However, in the case of manufacturing this is merely the continuation of a long-term trend of declining employment, while the contraction in employment in construction (–8.9 per cent) was considerably less than in the 1990s recession (–10.9 per cent).

These findings echo a 2013 survey by the TUC which claimed that much of the job creation since 2010 has taken place in industries where the average wage is less than GBP 7.95 an hour, particularly in the retail and residential care sectors, although these still record an overall decline in employment since 2008.¹⁴ A detailed study of shifts *within* sectors for the TUC in 2014 by Incomes Data Services found that employment in the

14. 'The UK's low-pay recovery. Four in five jobs created since June 2010 have been in low-paid industries', TUC, 2013.

financial services industry, a sector with well above average earnings, fell by a fifth between 2008 and 2013.¹⁵ Within the high-paying financial, insurance and real estate sector, by contrast, there has been a shift between towards lower-paying real estate jobs from higher paying financial and insurance activities. This was only partly offset by growth in the high-paying head office and management consultancy sectors, which employ proportionately much smaller numbers of people. There was also a marked increase in part-time work in low-paying sectors such as accommodation and food services. Other low-wage industries seeing strong growth in employment include social care, facilities management and leisure. Also noticeable was a shift in employment for 16–24 year olds towards part-time jobs, often in the same low-paying sectors.

Figure 6 **Changes in employment and weekly earnings by sector, %, March 2008 to March 2014**



Source: LFS and author's calculations.

15. 'Earnings and Settlements. A Research Report for the Trades Union Congress', Incomes Data Services, 2014.

5. Explanations: impact and policies

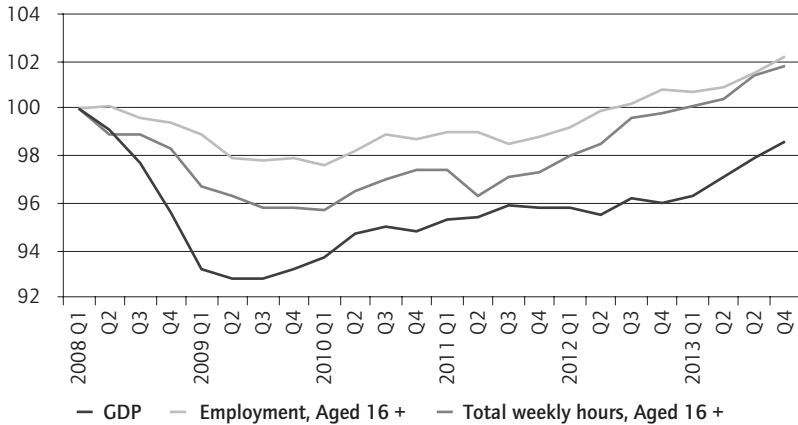
As noted in Section 2, while macroeconomic policy was clearly very supportive of growth and helped to avoid an even deeper recession, we need to look elsewhere for at least part of the explanation for the United Kingdom's employment performance over the past six years. Three other facets of the problem are examined here: first, the likelihood that employment was preserved at the expense of real wages and productivity, which declined sharply; second, that labour 'hoarding' took place, whereby firms were encouraged by memories of labour shortages following previous recessions to maintain their headcounts; and third, that active labour market policies and the flexibility of the UK labour market in general were responsible for the good jobs performance.

Obviously, these explanations are largely complementary, not alternatives. For example, the first set of factors, declining productivity, is an automatic consequence of the second, labour hoarding. The third factor, the policy environment, may have facilitated this. Of critical concern for policymakers is therefore the extent to which persistently poor productivity will eventually be reversed once firms' personnel decisions are not primarily motivated by the uncertainty that is characteristic of recession and its immediate aftermath. The fact that productivity has continued to lag even as growth and employment have improved does not bode well for the sustainability of the recovery and suggests that, in tandem with evidence presented here about sectoral polarisation, parts of the UK's labour market may have settled into a lower-wage, lower skills equilibrium that will require sustained investment in human and physical capital to resolve.

5.1 Real wages and productivity

As the two leading examples of 'liberal-market economies', characterised by flexible, decollectivised labour markets, many international comparisons of labour market performance bracket together the United Kingdom and the United States. What is apparent from the data, however, is that labour market adjustments following the downturn took place more on the wages and productivity side for the UK, and on the employment side for the US. Figure 7 below shows the extent of the collapse in GDP relative to the falls in employment and hours worked.

Figure 7 Output, employment and hours since 2008Q1



Source: Office for National Statistics.

Two clear trends that emerge from this recession and its aftermath have been the sharp and sustained fall in real wages in the United Kingdom and an accompanying fall in labour productivity. Between 1999 and 2007, the United Kingdom experienced the highest real wage growth of any G7 country (19 per cent), and has since experienced the biggest fall (6.1 per cent) (Taylor, Jowett and Hardie 2014). The fall in real wages has been fairly uniform across sectors, with only financial services seeing a peak to trough fall of more than 20 per cent (see Table 3). Puzzlingly, real wages have not begun to pick up even though short-term unemployment has fallen rapidly; the number of workers moving job-to-job has climbed rapidly since 2012 and is now close to its pre-crisis level, according to the Bank of England.¹⁶

One explanation for the slack in wages may be continued under-employment of workers, reflected in sustained weak productivity. Productivity performance, measured by output per unit of labour, also shows a sharp break with the past. UK productivity increased on average by 2.2 per cent annually between 2000 and 2007 but fell at an annual average rate of 0.6 per cent from 2008 onwards. Unit labour costs in the UK rose by 13.7 per cent between 2007 and late 2011. Apart from Italy, the United Kingdom experienced the weakest recovery in productivity

16. 'Inflation Report', Bank of England, November 2014.

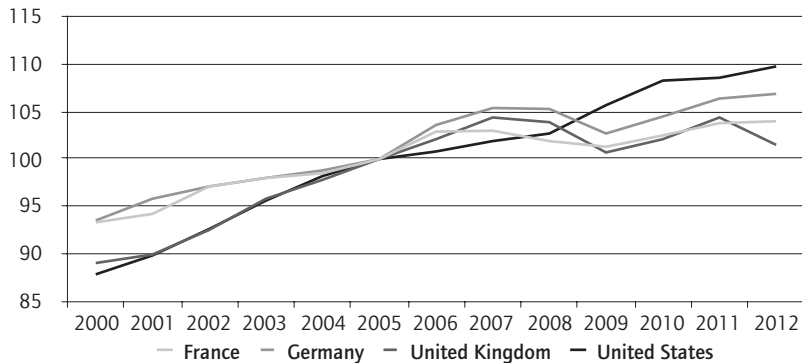
between 2009 and 2012. This presents a contrast to previous recessions when UK productivity recovered quickly after growth resumed.¹⁷ By contrast, the United States largely maintained its strong productivity performance (see Figure 8 below).

Table 3 Comparisons of changes in real wages across the G7, 2000–2012

	Canada	France	Germany	Italy	Japan	UK	US
2000	3.0	1.5	2.1	0.3	0.3	4.9	3.4
2001	−0.3	0.6	0.5	0.4	−0.3	4.1	0.8
2002	−1.2	2.6	0.7	−1.2	−1.7	2.0	0.8
2003	0.0	0.4	0.0	−0.5	0.0	1.8	1.2
2004	2.8	1.6	−0.1	2.0	0.2	1.2	1.8
2005	4.3	1.2	−0.2	1.1	1.7	−0.3	0.1
2006	3.0	1.2	0.3	0.3	−1.1	1.6	1.6
2007	2.4	0.5	0.1	0.0	−0.9	2.6	2.0
2008	1.2	−0.4	0.6	−0.3	0.3	−1.6	−0.7
2009	1.0	2.5	0.1	0.2	−1.4	1.0	0.8
2010	0.3	1.5	0.3	1.3	1.9	−2.0	0.5
2011	1.1	0.3	1.7	−1.5	2.4	−2.3	0.3
2012	2.3	0.4	1.0	−1.9	−1.4	−0.3	−0.2

Source: ONS/OECD.

Figure 8 Labour productivity (output per person employed) from 2000



Source: OECD.

¹⁷. ‘Assessment and Recommendations’, OECD Economic Survey of the United Kingdom 2015.

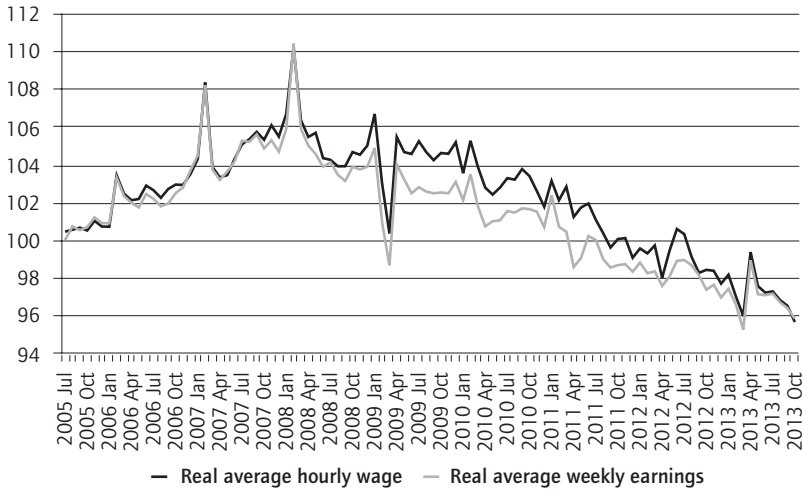
There is obviously a relationship between behaviour of real wages and productivity but it is not immediately clear from the data where the causality lies. On one hand, the fall in demand from lower national economic output may reduce the value of what a worker can produce, with firms responding to this by offering lower wages. On the other hand, the decline in real wages could have contributed to the resilience of employment relative to output and therefore to the fall in labour productivity.

Most analysts cleave to the latter view, which is largely supported by the data. The Institute for Fiscal Studies points out that the proportion of the working age population who are economically inactive today is the lowest since 1991, contrary to the experience of previous recessions when inactivity rates increased sharply as many individuals gave up looking for work. This suggests that more people are willing to work at a given real wage and/or are less responsive to falls in the real wage (Disney, Jin and Miller 2013).

One of the causes of the decline in real and nominal wages has obviously been a fall in the demand for labour. In the recession and its immediate aftermath there was a clear reduction in the weekly number of hours worked, reflected in real hourly and weekly earnings. Weekly earnings fell faster than hourly pay between 2008 and mid-2010, indicating the drop in weekly hours worked, although it has since picked up again (see Figure 9 below). Non-wage costs also jumped sharply between 2009 and 2010 after the government levied a 1 percentage point increase in national insurance contributions (a payroll tax) in an effort to deal with the growing budget deficit. According to the CBI, 55 per cent of private sector firms were operating a pay freeze in 2009, though this dropped to 14 per cent a year later.¹⁸ As demand for labour fell, many employees appear to have switched from full-time to part-time work in order to preserve their jobs, which accounts for the expansion of part-time jobs and self-employment noted above.

¹⁸. CBI Industrial Trends Survey 2010.

Figure 9 Real average hourly and weekly earnings, 2005=100



Source: ONS.

5.2 Did UK firms 'hoard' labour?

One contending explanation for the United Kingdom's good employment performance during the recession is that firms consciously chose to absorb the fall in demand for labour by maintaining headcounts at the cost of large falls in productivity. Employees enjoyed greater job stability than in previous recessions, but sacrificed wages and hours. By contrast, US firms did roughly opposite, allowing employment to take the hit while maintaining productivity. At face value this matches the data. But why did they do this?

There are indications that UK firms entered the recession in better shape financially than on previous occasions. Despite the depth of the credit crunch, non-bank companies' cash flow was well above levels of earlier recessions, partly thanks to ultra-low interest rates. Returns on domestic capital employed and profitability were also resilient (Martin and Rowthorn 2012). A possibility worth investigating is that, with healthier balance sheets, firms responded to economic difficulty by maintaining their workforces as much as possible rather than engaging in short-term cost-cutting.

Richard Lambert, a former director general of the Confederation of British Industry, has suggested that British industry is much more highly skilled than it used to be, with a much greater proportion of employees acquiring firm-specific skills, which encouraged employers to take a longer-term view on skills retention (Lambert 2010). CBI surveys conducted during and immediately after the recession noted unprecedented degrees of cooperation between management and labour over the challenges facing firms, with two-thirds of company respondents citing employee engagement as their top concern.¹⁹ The net reduction in private sector employment which occurred in 2008–2011 was not, in contrast to earlier recessions, due to higher rates of job loss, but reflects a sustained period of lower job creation in newer workplaces, especially SMEs, which were most vulnerable to the squeeze on bank lending (Butcher and Bursnall 2013).

Another possibility, which is not inconsistent with the explanation above, is capital shallowing. The fall in the price of labour relative to the cost of capital may have encouraged firms to substitute labour for equipment. Pessoa and Van Reenen argue that this accounts for the fact that labour productivity has fallen faster than total factor productivity. They estimate that capital shallowing caused by changes in factor prices account for up to half the fall in labour productivity since the start of the Great Recession, with a correspondingly large impact on employment (Pessoa and Van Reenen 2014).

Increases in employment continue to track the recovery in GDP, which is fortunately not consistent with the disquieting possibility that firms, having under-utilised labour while demand was weak, would fail to generate jobs when activity picked up again.

5.3 Labour market 'flexibility' and active labour market policies

Pro-market commentators have inevitably pointed to the flexibility of the United Kingdom's labour market as being behind its good employment performance during the recession, especially its low level of job protection. Certainly, in the United Kingdom – and the United States – the short-term drop in the employment rate in 2008–2010 was larger than in countries with more stringent levels of employment protection.

¹⁹. CBI Industrial Trends Survey 2010.

The less flexible French labour market saw employment levels decline by only 1 per cent initially. However, they have stayed stubbornly high in comparison with the 'Anglo-Saxon' labour markets, which quickly bounced back.

On the OECD's index of labour market protection the United Kingdom has averaged about 1.2 on a scale of 1–5 over the past decade, compared with an OECD average of 2.1 (for individual and collective dismissals, regular contracts). However, the reality is likely to be more complex. Certainly, the willingness of both employees and firms to cut wages and hours may have helped to preserve employment initially in the face of the demand shock. However, since many of the key reforms aimed at increasing flexibility were enacted in the late 1980s, for this to be decisive we should observe differences between the performances of the labour market between, on one hand, the 1980s recession, and the later recessions of the 1990s and 2008 when these reforms were in place; in fact, the key difference is between the first two and the third.

It seems more plausible that it was the slight re-regulation of the UK's labour market since 1997 that was responsible for its good performance, in particular the enactment of a number of policies to increase the employability of low-skilled workers and improve mechanisms for job search. Although spending on active labour market policies (ALMPs) in the UK is quite low by international standards it was stepped up considerably over the past 15 years under the last Labour government, and saw a further step-change in importance during the recession. OECD figures show UK spending on ALMPs, as a proportion of GDP, was up by 20 per cent in 2010 compared with FY 2007/08. Moreover, there is no necessary connection between spending on ALMPs and their effectiveness in creating jobs and the OECD has praised the UK for the effectiveness of its ALMPs.²⁰ The coalition government, which took power from Labour in May 2010, continued many of Labour's policies in one form or another, as well as introducing some of its own.

Key policies introduced over the past 15 years include:

- 'New Deals': A workfare programme first introduced in 1998, these provided training, subsidised employment and voluntary work to the unemployed, funded by a one-off windfall tax on privatised utility

²⁰. OECD Employment Outlook, 2013.

companies. Five New Deals were launched, covering the young unemployed (18–25), older workers, lone parents, the disabled and older workers.

- **Work Programme:** The coalition's replacement for the New Deal was launched in 2011. It uses private and voluntary sector providers to target the 'hard to reach' cases, particularly long-term unemployed and young and unskilled jobless who claim Employment and Support Allowance (EWA) rather than Jobseeker's Allowance. Forecasts are that, between June 2011 and March 2016, 2.1 million people will be referred to the Work Programme at a cost of GBP 2.8 billion. However, performance has been patchy, with only 11 per cent of EWA claimants gaining jobs compared with a target of 22 per cent, and 32 per cent of all clients gaining a job, compared with original forecasts of 42 per cent.²¹
- **Future Jobs Fund:** A major public and voluntary sector employment programme, the Future Jobs Fund (FJF) was introduced in October 2009 to support the creation of subsidised jobs for unemployed and disadvantaged young people. Official Statistics indicated that, between October 2009 and March 2011, just over 105,000 jobs were created under the FJF at a cost of BGP 680 million. The coalition government maintained the FJF but halved its funding. Twenty months after the start of their job, approximately 42 per cent of FJF participants were still claiming an out-of-work benefit.²²
- **New Enterprise Allowance:** Designed to help unemployed people start their own business, the NEA may have supported increases in self-employment during and after the recession, with the government reporting that 65,000 people were in receipt of the allowance by 2014.²³ On the other hand, levels of this associated with the NEA began to increase well before the recession.
- **Job Centre Plus:** The latest iteration of a series of reforms to improve facilities for job search among the unemployed.

21. NAO Report, *The Work Programme*, National Audit Office 2014.

22. 'Impact and Costs of the Future Jobs Fund'. Department for Work and Pensions, 2012.

23. 'New Enterprise Allowance Official Statistics', Department for Work and Pensions (DWP), 19 December 2014.

- Work Capability Assessments: Under the coalition, claimants of Employment and Support Allowance are now medically assessed to see whether they are fit for work, with the aim of cutting the numbers of people deemed unable to work for medical reasons.
- It is also worth noting that levels of the United Kingdom's national minimum wage, introduced in 1999 and reached through agreement between the social partners, are set quite low, with most authors agreeing that any negative impact on employment is low or non-existent.

Finally, it has been suggested in some quarters that employment levels held up because of a large expansion in the number of workers on 'zero hours' contracts (defined as contracts without a guaranteed number of hours of work), a regrettable feature of very lightly regulated labour markets. LFS estimates showed a doubling in the number of people on such contracts between October to December 2013 compared with the same period in 2012. However, the ONS attributes most of the increase to changes in status on the part of people who were already in the employment estimates but in another category of flexible employment, implying little impact on the overall employment figures.²⁴

6. Conclusion

Although the United Kingdom suffered its deepest recession since the 1930s, early and decisive intervention by the authorities to shore up growth undoubtedly spared the country an even worse outcome. For once, GDP and incomes took the hit while the job market was spared the worst. Firms appear to have responded to pro-growth signals from the government and the Bank of England to maintain employment where possible by adjusting wages instead. For their part, many workers, particularly older ones, have apparently concluded that it is better to accept insecurity, lower pay and/or lower skilled employment rather than become unemployed, while younger workers have opted to remain in education to ride out the downturn.

24. 'Analysis of employee contracts that do not guarantee a minimum number of hours,' Office for National Statistics, 2014.

It is here that decades of reforms to enhance the operation of labour markets by ironing out structural rigidities and improving mechanisms for job search appear to have borne fruit. While it is reasonable to point out that most of the United Kingdom's impressive employment performance is grounded in expansion of part-time and temporary work, high labour participation rates in the face of such a severe downturn at least help to preserve skills and avoid hysteresis.

Nevertheless, the coalition government's self-congratulation on its employment record glosses over deep-seated problems with the productivity of the labour force and indeed, with the entire structure of UK capitalism, which remains unbalanced and unable to nurture high-skilled employment. Much of the progress made over the past 15 years in up-skilling the labour force appears to have been thrown into reverse. With the economy now firmly in recovery mode and, indeed, probably nearing the peak of the current growth cycle, it is sobering to note that UK workers are still less productive per hour than they were before the financial crisis struck. Good headline GDP and employment data obscure an underlying picture of a low-wage, labour-intensive economy falling steadily behind its competitors. With wages low, profitability ought to be increasing, and this seems indeed to be happening. But firms still lack the confidence to invest in upgrading their product strategies and improving the skills of their workforces. Addressing this problem by restarting productivity growth is critical to the United Kingdom's long-term prosperity and the promise of proper pay rises.

References

- Autor D.H., Levy F. and Murnane R.J. (2003) The skill content of recent technological change: an empirical exploration, *The Quarterly Journal of Economics*, 118 (4), 1279-1333.
- Bank of England (2011) The United Kingdom's quantitative easing policy: design, operation and impact, *Quarterly Bulletin* Q3.
- Bank of England (2012) *Inflation Report*, November.
- Bank of England (2013) *Inflation Report*, May.
- Bank of England (2014) *Inflation Report*, November.
- Bank of England (2015) Self-employment: what can we learn from recent developments?, *Quarterly Bulletin*, Q1.
- Buther B. and Burnsnall M. (2013) How dynamic is the private sector? Job creation and insights from workplace-level data, *National Institute Economic Review*, 225 (1), F4-F14.
- CBI (2010) *Industrial trends survey*, London, Confederation of British Industry.
- CBI (2012) *Industrial trends survey*, London, Confederation of British Industry.
- Devlin C. *et al.* (2014) Impact of migration on UK native employment: an analytical review of the evidence, *Occasional Paper 109*, London, Department for Work and Pensions.
- Disney R., Jin W. and Miller H. (2013) The productivity puzzle, in Emmerson C., Johnson P. and Miller H. (eds.) *IFS Green Budget: February 2013*, London, Institute for Fiscal Studies, 53-90.
- DWP (2014) *New enterprise allowance quarterly official statistics: April 2011 to September 2014*, London, Department for Work and Pensions.
- Goos M. and Manning A. (2003) Lousy and lovely jobs: the rising polarisation of work in Britain, *Centre for Economic Performance, CEP Discussion Paper 604*, London, Centre for Economic Performance, London School of Economics and Political Science.
- Gregg P. and Wadsworth J. (2010) The UK labour market and the 2008-2009 recession, *Occasional Paper 25*, London, Centre for Economic Performance, London School of Economics and Political Science.
- Holmes C. (2014) Why is the decline of routine jobs across Europe so uneven?, *SKOPE Issues Paper 33*, Oxford, The Centre on Skills, Knowledge and Organisational Performance, University of Oxford.
- IDS (2014) *Earnings and settlements. A research report for the Trades Union Congress*, London, Incomes Data Services.
- Jenkins J. (2010) The labour market in the 1980s, 1990s and 2008/09 recessions, *Economic and Labour Market Review*, 4 (8), 29-36.

- Lambert R. (2010) The labour market and employment relations beyond the recession, Warwick Papers in Industrial Relations No. 93, Coventry, Industrial Relations Research Unit, University of Warwick.
- Lindley J. and Machin S. (2013) Labour market polarization, urbanization and skill-biased consumption, Paper presented at the Sole Conference 2014, May 2-3, 2014, Arlington, Virginia.
- Marlow S., Hillmore A. and Ainsworth P. (2012) Impact and costs and benefits of the Future Jobs Fund, London, Department for Work and Pensions.
- Martin B. and Rowthorn R. (2012) Is the British economy supply constrained II? A renewed critique of productivity pessimism, Cambridge, Centre for Business Research, University of Cambridge.
- NAO (2014) The Work Programme, London, National Audit Office.
- OECD (2013) Protecting jobs, enhancing flexibility: a new look at employment protection legislation, OECD Employment Outlook 2013, 65-126.
- OECD Employment Outlook 2013.
- OECD (2015) Assessment and recommendations, in OECD Economic Survey of the United Kingdom 2015, 7-48
- ONS (2014) Analysis of employee contracts that do not guarantee a minimum number of hours, London, Office for National Statistics.
- Pessoa J. P. and Van Reenen J. (2014) The UK productivity puzzle: does the answer lie in wage flexibility?, *The Economic Journal*, 124 (576), 433-452.
- Plunkett J. and Pessoa J. P. (2013) A polarising crisis? The changing shape of the UK and US labour markets from 2008 to 2012, London, Resolution Foundation.
- Taylor C., Jowett A. and Hardie M. (2014) An examination of falling real wages, 2010-2013, London, Office for National Statistics.
- TUC (2013) Four in five jobs created since June 2010 have been in low-paid industries, TUC. <https://www.tuc.org.uk/economic-issues/labour-market/four-five-jobs-created-june-2010-have-been-low-paid-industries>